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Blackmagic URSA Cine 12K LF Review  
and Preview of  
Blackmagic URSA Cine 17K 65



URSA Cine 12K LF Camera



URSA Cine 17K 65  
Camera Rendering

# Blackmagic URSA Cine 12K LF



The new Blackmagic URSA Cine 12K LF is definitely an “A” Camera. There are lots of things about this Large Format camera that are Bonzer—Aussie slang for our “Awesome.” Or maybe Ripper, as in “Excellent.”

The camera landed at FDTimes almost in time for the deadline to this edition to be missed as words and images kept flowing. Thanks to Blackmagic Design’s Senior Product Manager Tim Schumann for all the help, advice and hard yakka. Good on ya!

## URSA Cine 12K LF Details

Here are some of URSA Cine 12K LF things that are corker:

- Full Frame 12K sensor (35.64 x 23.32 mm). 1.5:1 (3:2) ratio.
- 12,288 x 8,040 effective pixels.
- speeds up to 80 fps at 12K 3:2 Open Gate. 224 fps at 8K 2.4:1.
- 16 Stops of dynamic range.
- PL Mount. EF Mount included and LPL Mount as accessory.
- Internal IRNDs: Clear, 2, 4 and 6 stops.
- Optical Low Pass Filter.
- 8TB Removable Blackmagic Media Module.
- 6 Anamorphic de-squeeze options in all recording formats.

Tim Schumann explained: “We developed our own sensor with an entirely new non-Bayer color filter array. Since this new sensor is Full Frame 12K, the pixels are larger than our previous URSA Mini Pro 12K Super35 camera, so the dynamic range is much higher at 16 stops.”

## History

Diviners and DPs have been saying for years, “Keep your eyes on Blackmagic Design. They are going to make a high-end camera at an astonishingly affordable price.”

Twelve years ago, Blackmagic Design CEO Grant Petty held aloft their first 2.5K Blackmagic Cinema Camera at NAB 2012. It sort of looked like the control stick on an airplane. They built it because he wasn’t satisfied with what he had to take family videos and finish them in DaVinci Resolve. A year later, he introduced the new 16mm 2K Pocket Cinema Camera. By 2014, they had the first URSA camera, with a Super35 4K sensor, global shutter, 12 stops of dynamic range, and internal dual CFast 2.0 slots. And so it went, an almost annual progression of innovative cameras.

## Rugged and Ergonomic

The URSA Cine 12K LF body is made of magnesium alloy and a lightweight carbon fiber polycarbonate composite skin to withstand hostile environments, long days and nights on set, and all the ways cameras are mounted to cars, cranes, planes and so on.

## 5" Monitors on Both Sides

Why don’t all cameras have this? The URSA Cine 12K LF does not assume that there’s a smart side and a dumb side.

There are two 1500 nit, 5" monitors with full menus and video—one monitor on each side of the camera. The monitor on the camera left side flips out 90° and pivots 360°. When it’s closed, there’s a status screen on the outside for basic settings.

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The monitor on camera right is flush against the body and is super helpful for camera assistants and DITs to check important status parameters such as frame rates, ISO, shutter angle, codec, etc. How often have you, dear camera operator, swatted away eager fingers of ACs and DITs fiddling with your camera left monitor while you're lighting a shot.

## PL, LPL, EF Mounts

The URSA LF (its shorter name in this article) ships with a native PL Mount installed and a locking EF Mount. LPL mounts are available as optional accessories and Hasselblad HC mounts are in the works. It's easy to swap mounts with just four 3mm hex screws. The mounts themselves are all individually shimmable.

Lens and lens mount makers, please note: with the PL Mount, the distance from the PL flange to the front of the sensor's cover glass is 31.98 mm.

For the LPL Mount, the distance is 24 mm between the LPL flange and the front glass element.

Tim Schumann notes: "There is a light baffle built into the LPL mount that comes in slightly at the sides from about 13.7 mm—but that can be unscrewed from the mount if there are any lenses that will fit but are hitting the baffle.

## Power

URSA LF uses a 24V power supply. It has a B-Mount on-board battery plate in back. The B-Mount battery interface is an open

industry standard developed by bebob. It supplies 24V at 15 amps or more. The internal release mechanism of the B-Mount Battery allows for smaller battery plates than with V- or Gold-Mount plates.

12 volt V-Lock and Gold-Mount plates are available. But 24V is recommended for powering the camera as well as lens motors and multiple accessories. An Anton/Bauer 26 volt plate will also be possible.

## URSA Cine EVF, Extender, Top Handle

The camera has a new URSA Cine EVF. It has soft-touch backlit buttons and uses a single USB-C cable for power and video. The viewfinder brackets and extender are works of art. They have dovetails for quick release. The viewfinder extender works with standard eyepiece levelers. You get the extension arm with the larger of the URSA Cine kits or if you buy the viewfinder on its own. The top handle has a similar dovetail mounting mechanism and you can very quickly and easily remove the entire viewfinder system and the top rods completely.

## URSA Cine Baseplate 19

The camera ships with an URSA Cine Baseplate 19 which works with 19 or 15mm rods, and it works with ARRI standard dovetail plates. When you position the Baseplate's lever in the central position, you can slide the camera backwards and forwards. Push the safety catch in and move the level to the rear position to lift the camera straight up off the dovetail plate.

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## Sensor and Anamorphic Desqueeze

Every in-camera recording format has the option of anamorphic desqueeze, with 2x, 1.8x, 1.66x, 1.6x, 1.5x, and 1.3x ratios.

## Focus Pullers Rejoice

Push the LENS button on the camera right side. The right-side monitor displays focus distance and aperture opening. Touch the “+” icon on screen to set focus marks. You can also choose between Metric and Imperial focus scales. Lens name, focal length, maximum aperture and serial number are shown for lenses with /i data contacts. This LENS screen can be sent via an SDI output if you’re pulling focus with a bigger monitor on set.

## Connections Forward (in Front)

- 3-pin Fischer style RS Remote Start-Stop and 24V 2A.
- 7-pin LEMO for Start-Stop and Serial connection. Also shares 24V 2A with the 3-pin RS port.
- The Viewfinder port has a USB-C connector to supply power and video. It locks with a 2mm hex screw.
- There are three different USB-C cables in the kit: one long cable and two short ones, one of which has a right angle connector at both ends. The other cable has a right angle at one end and a straight connector at the other end.

## Connections in Top

- Top right: 2 USB-C ports with weather-resistant covers. Use the rear USB-C port for camera updates and data downloads.
- Top, rear: 2x WiFi antennas, 2.5 and 5G.
- 2x 3-pin XLR connectors for Mic, Line or AES audio input.
- 2-pin LEMO 12V 1.5A power out port on top of battery plate.

## Connections Aft (at the Rear)

- Two 12G SDI BNC connectors. Each is independently configurable. You can send a clean feed from one and a “dirty” feed on the other, for example, with your focus puller’s screen.
- BNC Connector for Genlock or Timecode.
- RJ-45 10G Ethernet port – For media file downloads, web media management, camera control, Blackmagic Cloud media uploads, and more.
- 8-pin LEMO EXT. 24V DC external power input (pin compatible with ARRI ALEXA Mini, Mini LF and their cables).

## Media Bay - Camera Left

Open the flip-out monitor for access to the media bay. The camera ships with a Blackmagic Media Module 8TB SSD. It’s extremely fast — well over 5GB/s — with 16 PCI Express lanes.

In addition to the 8TB M.2 solid state storage Media Module, there will be a 2-slot CFexpress (Type B) module if you prefer CFexpress cards. A 16TB model is also planned.

## File Formats

URSA LF records Blackmagic RAW internally and also records simultaneous H. 264 proxy files.

With a 24V power supply or battery, the top speed is 80 fps in 12K Full Frame full height, 12,228 x 8,040 Open Gate 3:2 aspect ratio—and 120 fps in 2.4:1 (2.39:1) full width 12,228 x 5,112.

## Remote Control

The familiar Blackmagic Camera Control app will connect to the camera via Bluetooth. You can also connect to the camera via its

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10G Ethernet port or Wi-Fi and control the camera remotely.

The 7-pin LEMO connector at the front of the camera can also be used for start-stop and camera control from FIZ Hand Units. The serial control connected to this 7-pin LEMO will be able to use all the same Camera Control REST API commands that the Ethernet also responds to. Third party developers of follow focus equipment will be able to power their motors, send simple run-stop commands on the RS pins and also send camera control commands through this 7-pin port as well. Almost every function of the camera can be controlled through this connector.

## Price

The Blackmagic **URSA Cine 12K LF** camera system is US \$14,995. It comes in a nice, custom carry-on Pelican case with PL lens mount, Media Module 8TB, Top Handle and bolts, Top 15mm Rod Mount, Cine Baseplate 19 for 19mm rods, B-Mount Battery Plate, Locking EF mount, 24V 250W power supply, Da-Vinci Resolve Studio activation card., etc.

**URSA Cine 12K LF + EVF** camera system is US \$16,495. It comes in a slightly larger, equally nice custom Pelican case with all the things above, and: URSA Cine EVF, EVF Rotating Bracket with attached 19mm carbon fiber rod, EVF Bracket Rod Mount, EVF Finder Extension, 2x short carbon fiber 15mm rods, 3x viewfinder cables, rubber eyecup and chamois eyecup cover.

The Blackmagic Media Dock with 3 Media Module Bays is US \$1,995.

Additional 8TB Blackmagic Media Modules are US \$1,695 each.

[blackmagicdesign.com/products/blackmagicursacine](http://blackmagicdesign.com/products/blackmagicursacine)



URSA Cine 12K LF Camera System



URSA Cine 12K LF + EVF Camera System

# Blackmagic URSA Cine 12K LF

## Camera Left



## Camera Right - 5" LCD Monitor / Door Open



# Blackmagic URSA Cine 12K LF

Brilliant!

There's a second 5" HDR LCD 1920x1080 Monitor / Menu 1500 nit Touchscreen Display on the URSA Cine 12K LF camera on the camera right side.

Up to now, this has been derided as the "dumb side."

No more. The touchscreen lets you access all camera settings.

Focus pullers can enjoy the advanced "focus page" which displays focus and iris scales and marks on /i-equipped lenses.

Camera operators will rejoice not having to swat away the eager fingers of ACs, DITs or sound recordists attempting to make adjustments on the "smart-side" operator-side of the camera where menu controls previously resided on URSA cameras.

LENS: Focus Pullers, press here to cycle between rich, lean and clean views. Press DISPLAY button to view status, codec, resolution, audio, etc.

## Camera Right



Rear USB-C port: use this when updating camera

USB-C

/i lens data contacts at standard 12 o'clock position of PL Mount.

7-pin LEMO EXT connector: serial port, AKS power and start / stop.

- Pin 1 = Serial 2 RX
- Pin 2 = Serial 2 TX
- Pin 3 = Serial 1 RX
- Pin 4 = Serial 1 TX
- Pin 5 = 24V DC Out
- Pin 6 = Ground
- Pin 7 = RS Run / Stop

3-pin Fisher RS connector.  
Pin 1 = Ground  
Pin 2 = 24V DC Out  
Pin 3 = RS Run Stop

MENU

RECORD

## Rear



Camera comes with this B Mount (bebob style) for 24 volt onboard batteries. Using 12-14 volt batteries limits speeds above 60 fps and powering RS or EXT connectors.

USB-C

12G-SDI A OUT

12G-SDI B OUT

Timecode IN and REF IN

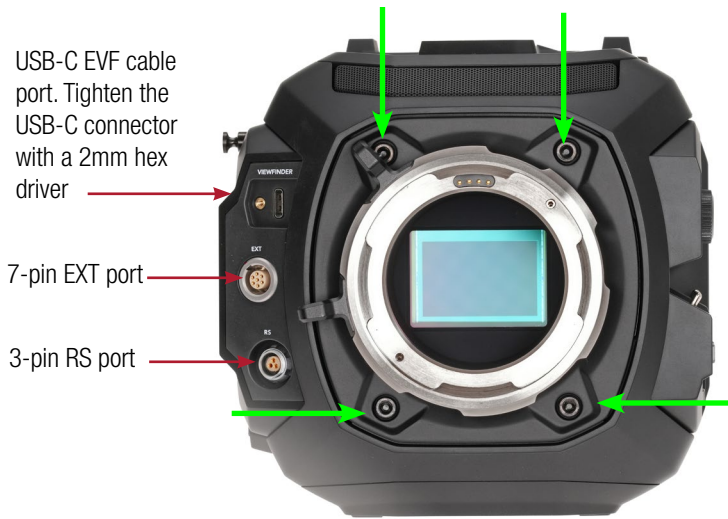
RJ-45 10G Ethernet

8-pin LEMO External Power IN. Camera comes with a 24V DC 250W power supply. Also accepts +12 - 34 V DC, but works best at +24 - 34 V DC. Pins 2,3,4 = ground. Pins 6,7,8 = DC + power.

Headphones

# Blackmagic URSA Cine 12K LF Lens Mounts

## Front



1. The URSA Cine 12K LF camera comes with a PL Mount attached. The PL Mount is distinguished by its two breech-lock tabs. An LPL Mount has three tabs.

There's a locking EF mount in the case.

Blackmagic also has an optional LPL mount and presumably more mounts will follow from them or third parties like Panavision, etc.

2. To swap mounts, remove the four 3mm hex screws in front (shown with green arrows).

3. Below: this is what the front of the camera looks like with the lens mount removed:



LPL Mount rear (toward camera) view



LPL Mount front view

4. Below: the LPL Mount is installed:



Locking EF Mount rear (toward camera) view



Locking EF Mount front view



# Blackmagic URSA Cine 12K LF

Top view with Top Handle, EVF, Bracket and Rods (15mm)



2-pin LEMO on top of battery plate for 12 V accessories.  
Pin 1 = Ground  
Pin 2 = +12 V DC 1.5A

3x 1/4-20 and 4x 3/8-16 threads on top →

Keep vents clear.

Top



Bottom

4x 1/4-20 and 5x 3/8-16 threads on bottom →



# Blackmagic URSA Cine 12K LF Studio Mode



URSA Cine 12K LF with EVF, Rotating EVF Bracket with attached 19mm carbon fiber rod, EVF Bracket Rod Mount, EVF Finder Extension, 2x short carbon fiber 15mm EVF rods, Blackmagic URSA 12K Baseplate and Bright Tangerine Misfit Kick Mk II 3-Stage Mattebox Kit, clipped onto SIGMA FF 65mm T1.5 prime lens and LeftField Standard Dovetail plate.

View from the Top



# Blackmagic URSA Cine 12K LF Handheld with Bright Tangerine

Bright Tangerine makes bright accessories to complement your Blackmagic URSA Cine 12K.

Like a perforated art installation, or Nike Flyprint marathon running shoes, or cool robot, Bright Tangerine's KASBAH Atman Universal Shoulder Rig Kit and Handles comfortably fit to your form.

Complete with Bright Tangerine's 15mm LWS Support Kit , Drumstix 15mm Titanium 6" Support Rods, Misfit Kick Mk II 3-Stage Mattebox with Frame Safe Clamp Adapter, clipped onto SIGMA 65mm T1.5 FF prime.



The KASBAH ÄTMAN Universal Shoulder Rig has a sliding, perforated shoulder pad and articulating hand grips. It is extremely lightweight, well-balanced, and as comfortable as a parrot perched upon a shoulder for long hours of handheld camera work. When a tripod is needed, it attaches to a VCT-14 plate.

# Blackmagic URSA Cine 12K LF



Top View



Bottom View

# Blackmagic URSA Cine 12K LF

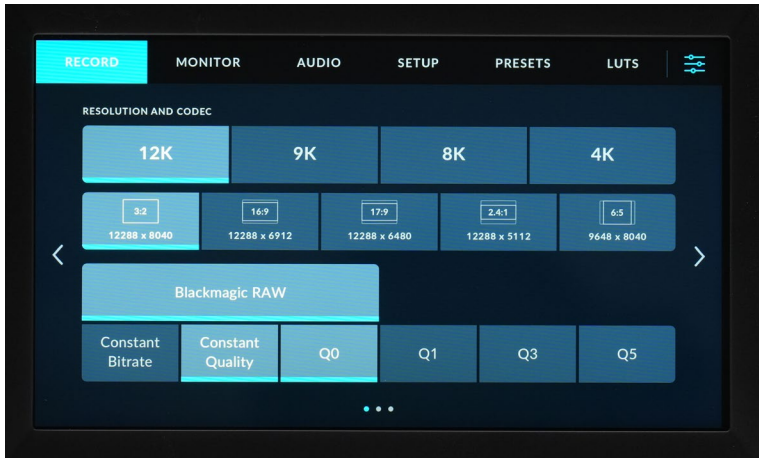


URSA Cine 12K LF Media Module Bay and Blackmagic M.2 Media Module 8TB.



Blackmagic Media Dock with 3 Media Module Bays, shown with one Media Module.

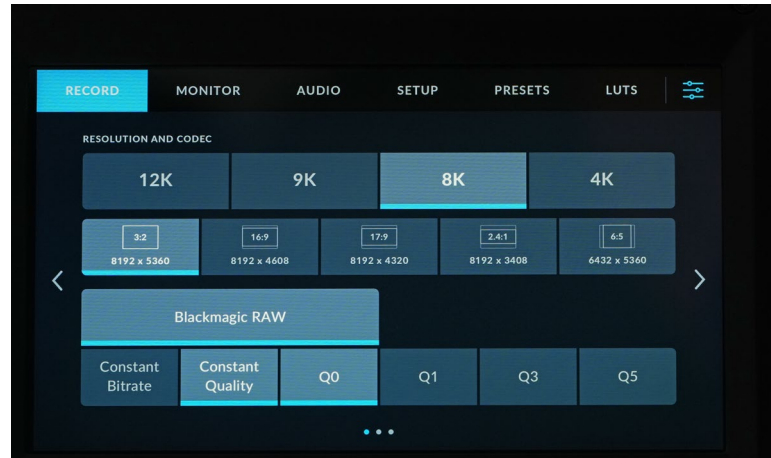
# Blackmagic URSA Cine 12K LF Q & A



RECORD. This is the opening page of the URSA Cine 12K LF menus. If you've worked with earlier Blackmagic URSA cameras, it will be very familiar.

Q: For the very best quality, what best: Constant Bitrate or Constant Quality ?

A: It's always good to ask the Product Manager. Tim Schumann replies, "Constant Bitrate of 3:1 is good. Arguably Constant Quality Q0 or Q1 settings will get you slightly better results if you are doing a shot that is insanely difficult to compress (think a glitter cannon going off at the Super Bowl on a wide shot at 12K 80 fps on a very sunny day with absolutely no motion blur or bits that are out of focus in the shot). In normal shooting conditions it will be very hard to spot any difference between them. Even the higher compression Q3 is a really nice sweet spot for image quality and data rate."

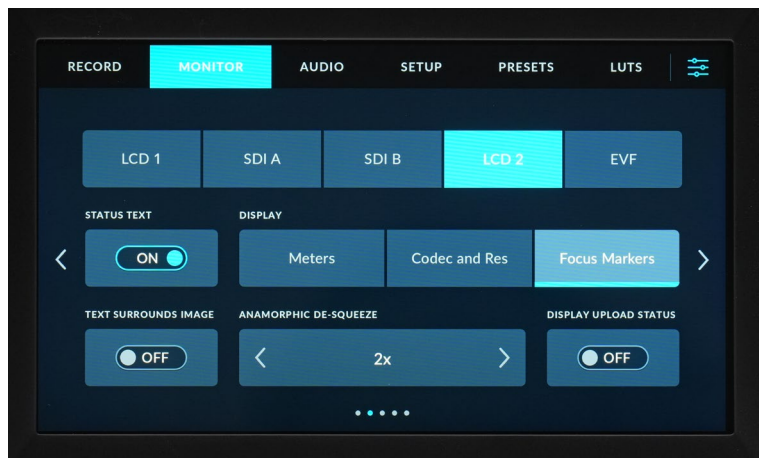


Q: For 2.39:1 spherical widescreen best quality for theatrical and streaming delivery, what is best: 12K or 4K BRAW and choose the 2.4:1 sensor mode?

A: "For best quality in terms of resolution, 12K at whatever aspect ratio is closest to what you are finishing in is best. If you aren't as concerned with resolution and are after best motion rendition, then 8K will have a bit of an edge over 12K as we run the sensor faster, so sensor readout time is decreased substantially. 4K has the same temporal benefits of the 8K modes but also saves you a bit of space in terms of file size."

Q: Does the Menu setting "Apply LUT in file" embed it forever?

A: "We aren't baking in the LUT. This setting means that the LUT will be turned on by default when looking at the RAW file in DaVinci Resolve. The LUT will be saved in the header of the file."



## ANAMORPHIC

3. What sensor mode do you recommend for 1.3x squeeze Full Frame full height anamorphic for 2.39:1 delivery ?

A: Using the chart on page 114 of the URSA Cine 12K manual (available online at [blackmagicdesign.com/support/family/professional-cameras](http://blackmagicdesign.com/support/family/professional-cameras) I'd say shooting in 16:9 or 17:9 would be the best formats for getting to 2.39:1 with a 1.33x squeeze. Granted this isn't full height but even if you do shoot full height in 3:2 or 6:5 you are going to have to crop off the top and bottom of your image to get to 2.39 anyway.

Capture Format	3:2	16:9	17:9	2.4:1	6:5	
Capture Format :1	1.50:1	1.78:1	1.89:1	2.40:1	1.20:1	
Desqueezed Aspect Ratio						
Squeeze Factor	None	1.50:1	1.78:1	1.89:1	2.40:1	1.20:1
	1.33x	2.00:1	2.36:1	2.51:1	3.19:1	1.60:1
	1.5x	2.25:1	2.67:1	2.83:1	3.60:1	1.80:1
	1.6x	2.40:1	2.84:1	3.02:1	3.84:1	1.92:1
	1.66x	2.49:1	2.95:1	3.14:1	3.98:1	1.99:1
	1.8x	2.70:1	3.20:1	3.40:1	4.32:1	2.16:1
	2.0x	3.00:1	3.56:1	3.78:1	4.80:1	2.40:1

This Anamorphic Desqueeze chart, derived from Blackmagic's, is helpful and saves time working through the math of figuring out how wide your desqueezed widescreen anamorphic delivery format will be.

For example, using a 2x squeeze Full Frame anamorphic lens with URSA Cine 12K LF's Full Frame 3:2 (1.5:1) capture format will result in a 3:1 desqueezed image. But your delivery format is 2:1. You can crop in post.

Or, let's say you want to shooting with a 1.5x squeeze anamorphic in URSA Cine LF's other full-height 23.32mm capture format of 6:5 (1.2:1) for a 2.39:1 delivery. The chart shows that you will not achieve 2.39:1.

And, if you see 2.40:1 in the chart, you can always crop slightly vertically or horizontally in post to get 2.39:1 instead of 2.40:1.

# URSA Cine 17K 65mm Camera. Lots of Lenses Available.



URSA Cine 17K 65mm  
Camera with LPL mount  
Sensor size:  
50.81 x 23.32 mm  
Diagonal: 55.9mm



URSA Cine 12K LF  
Camera with PL mount  
Sensor size:  
35.64 x 23.32 mm  
Diagonal: 42.59 mm

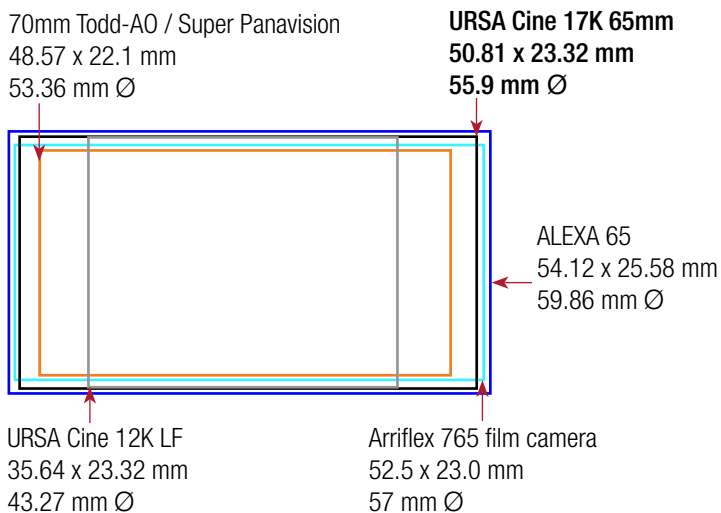
Blackmagic's URSA Cine 17K 65mm camera was announced in April. It was under glass at NAB and Cine Gear. Soldering and software deities willing, a touchable pre-production camera will appear at IBC in Amsterdam.

We'll probably hear the first rumblings of new 65mm format lenses at IBC as well. Meanwhile, the Larger Format world opens up with many existing 65mm and Larger Format lens series—vintage, ancient and modern. Here's a quick preview.

- Blackwing7 primes: 20.7, 27, 37, 47, 57, 77, 107, 137 mm T1.9 in PL mounts.
- Leitz Thalia: 24, 30, 35, 45, 55, 70, 100, 120, 180 mm. T2.2 to T3.6. Image diagonal is 60mm. Thalias come in user-swappable PL or LPL mounts.
- Whitepoint Optics TS70 Large Format Prime Lens Series, rehoused Hasselblad: 30, 40, 60, 80, 100, 120 mm T2.8 to T4. Image circle: 80mm.
- Ottoblads from Otto Nemenz International Rental: 30, 40, 50, 60, 80, 100, 120, 150, 180, 250, 350, 500 mm T 3.5 to T4.0.
- ARRI Rental Prime 65 (rehoused Hasselblad): 24, 28, 35, 50, 80, 100, 150, 300, 50-110 mm T2.2 to T4.5.
- ARRI Rental Prime 65 S: 35, 45, 55, 75, 90, 120, 150 mm T2.5 to T2.8.
- ARRI Rental Prime DNA: 35, 45, 55, 70, 80, 110, 150, 200 mm T2.8 to T3.5.
- TLS rehoused Mamiya 645, in LPL mounts: 24mm fisheye, 35, 45, 55, 70, 80, 110, 150 mm T2.3 - T3.3
- Panavision System 65 (Rental): 24, 35, 40, 50, 75, 100, 150, 180, 300 mm T1.9 to T3.5.
- Panavision 65 Vintage (Rental): 24, 29, 35, 40, 50, 65, 80, 100,

- 135, 180, 300 mm T1.4 to T2.8
- Super Panavision 70: 28, 35, 50, 75, 100, 150 mm T 2 to T3.
- Ultra Panavision 70: 35, 40, 50, 65, 75, 100, 180, 290, 400 mm T2 to T6.
- Panavision System 65: 24, 35, 40, 50, 75, 100, 150, 180, 300 mm T1.9 to T3.5.
- Panavision Sphero 65: 24, 35, 40, 50, 75, 100, 135, 180, 300 mm T2 to T2.8.
- Vantage Hawk and many more.

## 65mm / 70mm Image Size Comparison



# Blackmagicdesign



[blackmagicdesign.com/products/blackmagicursacine](https://blackmagicdesign.com/products/blackmagicursacine)



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by Jon Fauer

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